

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A device for transmitting data in an installation ~~(1)~~ for working fluids contained under ground ~~(19)~~, the installation comprising a cavity ~~(13)~~ defined in an underground formation ~~(19)~~ and extending from the surface of the ground ~~(17)~~, said cavity ~~(13)~~ being provided with at least one electrically conductive tubular element ~~(21; 25)~~, the device being of the type comprising a single-strand smooth cable ~~(3)~~ for supporting an action and/or measurement assembly ~~(5)~~, the cable having a breaking strength greater than 300 daN, being made of an electrically conductive material and being disposed in the tubular element ~~(21; 25)~~ between a first point at the surface of the ground ~~(17)~~ and a second point within the cavity ~~(13)~~, wherein the device being characterized in that the surface of the cable ~~(3)~~ is electrically insulated, at least in part, from said tubular element ~~(21; 25)~~, and wherein in that the device further comprises transmitter means ~~(9, 11)~~ for transmitting an electrical and/or electromagnetic signal, situated in the vicinity of one or both of the first and second points, and receiver means ~~(9, 11)~~ for receiving an electrical and/or electromagnetic signal situated in the vicinity of the other one or both of the first and second points; each of said transmitter means and said receiver means being electrically connected firstly to the cable ~~(3)~~ and secondly to the tubular element ~~(21; 25)~~ and/or to the formation ~~(19)~~; the cable ~~(3)~~ constituting a portion of a loop for conveying the electrical and/or electromagnetic signal between the transmitter means ~~(9, 11)~~ and the receiver means ~~(9, 11)~~.

2. (Currently Amended) A transmission device according to claim 1, wherein ~~characterized in that~~ the surface of the cable ~~(3)~~ carries a continuous coating of insulating material and is electrically insulated from said tubular element ~~(21; 25)~~.

3. (Currently Amended) A transmission device according to claim 2, wherein ~~characterized in that~~ the thickness of the continuous coating of insulating material is equal to half the difference in diameter between two standard and non-coated cables ~~(3)~~.

4. (Currently Amended) A transmission device according to claim 1, wherein

~~characterized in that~~ the surface of the cable (3) is provided at regular intervals with centralizers (71) of insulating material for electrically insulating said tubular element (21; 25).

5. (Currently Amended) A transmission device according to claim 1, wherein ~~any one of claims 1 to 4, characterized in that~~ the transmitter and receiver means (9, 11) in the vicinity of the first and second points are electrically connected to said tubular element (21; 25) and wherein ~~in that~~ the signal transmitted by the transmitter means (9, 11) and received by the receiver means (9, 11) is an electrical signal.

6. (Currently Amended) A transmission device according to claim 1, wherein ~~any one of claims 1 to 5, characterized in that~~ the cavity (13) is provided with at least a first tubular element (21) and a second tubular element (25) disposed inside the first element (21), and wherein ~~in that~~ the cable (3) is disposed in the annular space between the first and second elements (21, 25).

7. (Currently Amended) A transmission device according to claim 1, wherein ~~any one of claims 1 to 4, characterized in that~~ the surface of the cable (3) has at least one electrical contact point (81) with said tubular element (21; 25), and wherein ~~in that~~ the transmitter means and/or receiver means (9, 11) in the vicinity of the first and second points and said tubular element (21; 25) are electrically connected to the formation (19).

8. (Currently Amended) A transmission device according to claim 7, wherein ~~characterized in that~~ the electrical signal transmitted by the transmitter means (9) in the vicinity of the first point is injected to a first dipole comprising firstly an electrical contact point (84) between the cable (3) and the transmitter means (9) in the vicinity of the first point, and secondly an electrical contact point (83) between the formation (19) and the transmitter means (9) in the vicinity of the first point; the first dipole generating an electromagnetic signal that is received by a second dipole comprising firstly one of said electrical contact points (81) between the cable (3) and the tubular element (21; 25), and secondly an electrical contact point (87) between the tubular element (21; 25) and the receiver means (11) in the vicinity of the second point, with the electromagnetic signal received by the second dipole generating an electrical signal which is

conveyed to the receiver means (11) in the vicinity of the second point.

9. (Currently Amended) A transmission device according to claim 7, wherein ~~or claim 8,~~ ~~characterized in that~~ the electrical signal transmitted by the transmitter means (11) in the vicinity of the second point is injected into a second dipole comprising firstly one of said electrical contact points (81) between the cable and the tubular element (21; 25), and secondly an electrical contact point (87) between the tubular element (21; 25) and the transmitter means (11) in the vicinity of the second point, said second dipole generating an electromagnetic signal received by a first dipole comprising, firstly an electrical contact point (84) between the cable (3) and the receiver means (9) in the vicinity of the first point, and secondly an electrical contact point (83) between the formation (19) and the receiver means (9) in the vicinity of the first point; the electromagnetic signal received by the first dipole generating an electrical signal that is conveyed to the receiver means (9) in the vicinity of the first point.

10. (Currently Amended) A transmission device according to claim 1, wherein ~~any one of claims 7 to 9,~~ ~~characterized in that~~ the electrical contact between the formation and the transmitter and/or receiver means in the vicinity of the first point takes place via a conductor member (83) anchored in the ground (19).

11. (Currently Amended) A transmission device according to claim 1, wherein ~~any one of claims 1 to 10,~~ ~~characterized in that~~ the transmitter means (9, 11) and the receiver means (9, 11) for transmitting and receiving an electrical and/or an electromagnetic signal are situated in the vicinity of respective ones of the first and second points.

12. (Currently Amended) A transmission device according to claim 1, wherein ~~any one of claims 1 to 10,~~ ~~characterized in that~~ the transmitter means (9) for transmitting an electrical and/or an electromagnetic signal are situated solely in the vicinity of one of the first and second points, and the receiver means (11) for receiving an electrical and/or an electromagnetic signal are situated solely in the vicinity of the other one of the first and second points.

13. (Currently Amended) An installation for working fluids contained underground ~~(19)~~, the installation comprising a cavity ~~(13)~~ defined in an underground formation ~~(19)~~ extending from the surface of the ground ~~(17)~~ and closed on the surface by a wellhead ~~(15)~~, said cavity ~~(13)~~ being provided with at least one electrically conductive tubular element ~~(21; 25)~~, the installation including being characterized in that it includes a transmission device according to claim 1. ~~any one of claims 1 to 12.~~

14. (Currently Amended) An installation according to claim 13, including characterized ~~in that it includes~~ an applicator device ~~(61)~~ for applying an insulating coating on the cable ~~(3)~~.

15. (Currently Amended) An installation according to claim 14, in which the wellhead ~~(15)~~ is preceded by an airlock ~~(51)~~ provided with a sealing device ~~(53)~~ for the cable ~~(3)~~, wherein ~~the installation being characterized in that~~ the applicator device ~~(61)~~ for applying the insulating coating on the cable ~~(3)~~ is disposed inside the airlock ~~(51)~~ downstream from the sealing device ~~(53)~~.

16. (Currently Amended) An installation according to claim 14, including deployment means ~~(7)~~ and an alignment device ~~(43)~~ for putting the cable ~~(3)~~ into alignment in the wellhead ~~(15)~~, the alignment device comprising at least one pulley ~~(49)~~, wherein the installation being ~~characterized in that~~ the applicator device ~~(61)~~ for applying the insulating coating on the cable ~~(3)~~ is disposed between the deployment means ~~(7)~~ and the alignment device ~~(43)~~, and wherein in ~~that~~ the or each pulley ~~(49)~~ is electrically insulated from the wellhead ~~(15)~~ and/or the formation ~~(19)~~.